SCIENCE

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*THE MIND OF PRIMITIVE MAN.**

ONE of the chief aims of anthropology is the study of the mind of man under the varying conditions of race and of environment. The activities of the mind manifest themselves in thoughts and actions, and exhibit an infinite variety of form among the peoples of the world. In order to understand these clearly, the student must endeavor to divest himself entirely of opinions and emotions based upon the peculiar social environment into which he is born. He must adapt his own mind, so far as feasible, to that of the people whom he is studying. The more successful he is in freeing himself from the bias based on the group of ideas that constitute the civilization in which he lives, the more successful he will be in interpreting the beliefs and actions of man. He must follow lines of thought that are new to him. He must participate in new emotions, and understand how, under unwonted conditions, both lead to actions. Beliefs, customs, and the response of the individual to the events of daily life, give us ample opportunity to observe the manifestations of the mind of man under varying conditions.

The thoughts and actions of civilized man and those found in more primitive forms of society prove that, in various

* Address of the retiring president before the American Folk-Lore Society, Baltimore, Dec. 27th.

groups of mankind, the mind responds quite differently when exposed to the same conditions. Lack of logical connection in its conclusions, lack of control of will, are apparently two of its fundamental characteristics in primitive society. In the formation of opinions, belief takes the place of logical demonstration. The emotional value of opinions is great, and consequently they quickly lead to action. The will appears unbalanced, there being a readiness to yield to strong emotions, and a stubborn resistance in trifling matters.

In the following remarks I propose to analyze the differences which characterize the mental life of man in various stages of culture. It is a pleasant duty to acknowledge here my indebtedness to my friends and colleagues in New York, particularly to Dr. Livingston Farrand, with whom the questions here propounded have been a frequent theme of animated discussion, so much so, that at the present time I find it impossible to say what share the suggestions of each had in the development of the conclusions reached.

There are two possible explanations of the different manifestations of the mind of man. It may be that the minds of different races show differences of organization; that is to say, the laws of mental activity may not be the same for all minds. But it may also be that the organization of mind is practically identical among all races of man; that mental activity follows the same laws everywhere, but that its manifestations depend upon the character of individual experience that is subjected to the action of these laws.

It is quite evident that the activities of the human mind depend upon these two elements. The organization of the mind may be defined as the group of laws which determine the modes of thought and of action, irrespective of the subject matter of mental activity. Subject to such laws are the manner of discrimination between perceptions, the manner in which perceptions associate themselves with previous perceptions, the manner in which a stimulus leads to action, and the emotions produced by stimuli. These laws determine to a great extent the manifestations of the mind.

But, on the other hand, the influence of individual experience can easily be shown to be very great. The bulk of the experience of man is gained from oft-repeated impressions. It is one of the fundamental laws of psychology that the repetition of mental processes increases the facility with which these processes are performed, and decreases the degree of consciousness that accompanies them. This law expresses the well-known phenomena of habit. When a certain perception is frequently associated with another previous perception, the one will habitually call forth the other. When a certain stimulus frequently results in a certain action, it will tend to call forth habitually the same action. If a stimulus has often produced a certain emotion, it will tend to reproduce it every time.

The explanation of the activity of the mind of man, therefore, requires the discussion of two distinct problems. The first bears upon the question of unity or diversity of organization of the mind, while the second bears upon the diversity produced by the variety of contents of the mind as found in the various social and geographical environments. The task of the investigator consists largely in separating these two causes and in attributing to each its proper share in the development of the peculiarities of the mind. It is the latter problem principally which is of interest to the folk-lorist. When we define as folk-lore the total mass of traditional matter present in the mind of a given people at any given time, we recognize that this matter must influence the opinions and activities of the people more or less according to

its quantitative and qualitative value, and also that the actions of each individual must be influenced to a greater or less extent by the mass of traditional material present in his mind.

We will first devote our attention to the question, Do differences exist in the organization of the human mind? Since Waitz's thorough discussion of the question of the unity of the human species, there can be no doubt that in the main the mental characteristics of man are the same all over the world; but the question remains open, whether there is a sufficient difference in grade to allow us to assume that the present races of man may be considered as standing on different stages of the evolutionary series, whether we are justified in ascribing to civilized man a higher place in organization than to primitive man. In answering this question, we must clearly distinguish between the influences of civilization and of race. A number of anatomical facts point to the conclusion that the races of Africa, Australia, and Melanesia, are to a certain extent inferior to the races of Asia, America and Europe. We find that on the average the size of the brain of the negroid races is less than the size of the brain of the other races; and the difference in favor of the mongoloid and white races is so great, that we are justified in assuming a certain correlation between their mental ability and the increased size of their brain. At the same time it must be borne in mind that the variability of the mongoloid and white races on the one hand, and of the negroid races on the other, is so great, that only a comparatively speaking small number of individuals belonging to the latter have brains smaller than any brains found among the former; and that, on the other hand, only a few individuals of the mongoloid races have brains so large that they would not occur at all among the black races. That is to say, the bulk of the two groups of races have brains of the same capacities, but individuals with heavy brains are proportionately more frequent among the mongoloid and white races than among the negroid races. Probably this difference in the size of the brain is accompanied by differences in structure, although no satisfactory information on this point is available. On the other hand, if we compare civilized people of any race with uncivilized people of the same race, we do not find any anatomical differences which would justify us in assuming any fundamental differences in mental constitution.

When we consider the same question from a purely psychological point of view, we recognize that one of the most fundamental traits which distinguish the human mind from the animal mind is common to all races of man. It is doubtful if any animal is able to form an abstract conception such as that of number, or any conception of the abstract relations of phenomena. We find that this is done by all races of man. A developed language with grammatical categories presupposes the ability of expressing abstract relations, and, since every known language has grammatical structure, we must assume that the faculty of forming abstract ideas is a common property of man. It has often been pointed out that the concept of number is developed very differently among different people. While in most languages we find numeral systems based upon the 10, we find that certain tribes in Brazil, and others in Australia, have numeral systems based on the 3, or even on the 2, which involve the impossibility of expressing high numbers. Although these numeral systems are very slightly developed as compared with our own, we must not forget that the abstract idea of number must be present among these people, because, without it, no method of counting is possible. It may be worth while to mention one or two

other facts taken from the grammars of primitive people, which will make it clear that all grammar presupposes abstractions. The three personal pronouns—I, thou, and he—occur in all human languages. The underlying idea of these pronouns is the clear distinction between the self as speaker, the person or object spoken to, and that spoken of. We also find that nouns are classified in a great many ways in different languages. While all the older Indo-European languages classify nouns according to sex, other languages classify nouns as animate or inanimate, or as human and not human, etc. Activities are also classified in many different ways. It is at once clear that every classification of this kind involves the formation of an abstract idea. The processes of abstraction are the same in all languages, and they do not need any further discussion, except in so far as we may be inclined to value differently the systems of classification and the results of abstraction.

The question whether the power to inhibit impulses is the same in all races of man is not so easily answered. It is an impression obtained by many travelers, and also based upon experiences gained in our own country, that primitive man and the less educated have in common a lack of control of emotions, that they give way more readily to an impulse than civilized man and the highly educated. I believe that this conception is based largely upon the neglect to consider the occasions on which a strong control of impulses is demanded in various forms of society. What I mean will become clear when I call your attention to the often described power of endurance exhibited by Indian captives who undergo torture at the hands of their enemies. When we want to gain a true estimate of the power of primitive man to control impulses, we must not compare the control required on certain occasions among ourselves with the control exerted by primitive man on the same occasions. If, for instance, our social etiquette forbids the expression of feelings of personal discomfort and of anxiety, we must remember that personal etiquette among primitive man may not require any inhibition of the same kind. We must rather look for those occasions on which inhibition is required by the customs of primitive man. Such are, for instance, the numerous cases of taboo, that is, of prohibitions of the use of certain foods, or of the performance of certain kinds of work, which sometimes require a considerable amount of self-control. When an Eskimo community is on the point of starvation, and their religious proscriptions forbid them to make use of the seals that are basking on the ice, the amount of self-control of the whole community, which restrains them from killing these seals, is certainly very great. Cases of this kind are very numerous, and prove that primitive man has the ability to control his impulses, but that this control is exerted on occasions which depend upon the character of the social life of the people, and which do not coincide with the occasions on which we expect and require control of impulses.

The third point in which the mind of primitive man seems to differ from that of civilized man is in its power of choosing between perceptions and actions according to their value. On this power rests the whole domain of art and of ethics. An object or an action becomes of artistic value only when it is chosen from among other perceptions or other actions on account of its beauty. An action becomes moral only when it is chosen from among other possible actions on account of its ethical value. No matter how crude the standards of primitive man may be in regard to these two points, we recognize that all of them possess an art, and that all of them possess

ethical standards. It may be that their art is quite contrary to our artistic feeling. It may be that their ethical standards outrage our moral code. We must clearly distinguish between the æsthetic and ethical codes and the existence of an æsthetic and ethical standard.

Our brief consideration of the phenomena of abstraction, of inhibition and of choice, leads, then, to the conclusion that these functions of the human mind are common to the whole of humanity. It may be well to state here, that, according to our present method of considering biological and psychological phenomena, we must assume that these functions of the human mind have developed from lower conditions existing at a previous time, and that at one time there certainly must have been races and tribes in which the properties here described were not at all, or only slightly, developed; but it is also true, that among the present races of man, no matter how primitive they may be in comparison with ourselves, these faculties are highly developed.

It is not impossible that the degree of development of these functions may differ somewhat among different types of man; but I do not believe that we are able at the present time to form a just valuation of the power of abstraction, of control and of choice among different races. A comparison of their languages, customs, and activities suggests that these faculties may be unequally developed; but the differences are not sufficient to justify us in ascribing materially lower stages to some peoples, and higher stages to others. The conclusions reached from these considerations are therefore, on the whole, negative. We are not inclined to consider the mental organization of different races of man as differing in fundamental points.

We next turn to a consideration of the second question propounded here, namely, to an investigation of the influence of the contents of the mind upon the formation of thoughts and actions. We will take these up in the same order in which we considered the previous question. We will first direct our attention to the phenomena of perception. It has been observed by many travelers that the senses of primitive man are remarkably well trained, that he is an excellent observer. The adeptness of the experienced hunter, who finds the tracks of his game where the eye of a European would not see the faintest indication, is an instance of this kind. While the power of perception of primitive man is excellent, it would seem that his power of logical interpretation of perceptions is deficient. I think it can be shown that the reason for this fact is not founded on any fundamental peculiarity of the mind of primitive man, but lies, rather, in the character of the ideas with which the new perception associates itself. In our own community a mass of observations and of thoughts is transmitted to the child. These thoughts are the result of careful observation and speculation of our present and of past generations; but they are transmitted to most individuals as traditional matter, much the same as folk-lore. The child associates new perceptions with this whole mass of traditional material, and interprets his observations by its means. I believe it is a mistake to assume that the interpretation made by each civilized individual is a complete logical process. We associate a phenomenon with a number of known facts, the interpretations of which are assumed as known, and we are satisfied with the reduction of a new fact to these previously known facts. For instance, if the average individual hears of the explosion of a previously unknown chemical, he is satisfied to reason that certain materials are known to have the property of exploding under proper conditions, and that consequently the unknown substance has the same qual-

ity. On the whole, I do not think that we should try to argue still further, and really try to give a full explanation of the causes of the explosion.

The difference in the mode of thought of primitive man and of civilized man seems to consist largely in the difference of character of the traditional material with which the new perception associates itself. The instruction given to the child of primitive man is not based on centuries of experimentation, but consists of the crude experience of generations. When a new experience enters the mind of primitive man, the same process which we observe among civilized man brings about an entirely different series of associations, and therefore results in a different type of explanation. A sudden explosion will associate itself in his mind, perhaps, with tales which he has heard in regard to the mythical history of the world, and consequently will be accompanied by superstitious fear. When we recognize that, neither among civilized man nor among primitive man, the average individual carries to completion the attempt at causal explanation of phenomena, but carries it only so far as to amalgamate it with other previously known facts, we recognize that the result of the whole process depends entirely upon the character of the traditional material: herein lies the immense importance of folk-lore in determining the mode of thought. Herein lies particularly the enormous influence of current philosophic opinion upon the masses of the people, and herein lies the influence of the dominant scientific theory upon the character of scientific work.

It would be in vain to try to understand the development of modern science without an intelligent understanding of modern philosophy; it would be in vain to try to understand the history of medieval science without an intelligent knowledge of medieval theology; and so it is in vain to try to understand primitive science without an intelligent knowledge of primitive mythology. Mythology, theology and philosophy are different terms for the same influences which shape the current of human thought, and which determine the character of the attempts of man to explain the phenomena of nature. To primitive man—who has been taught to consider the heavenly orbs as animate beings, who sees in every animal a being more powerful than man, to whom the mountains, trees and stones are endowed with life—explanations of phenomena will suggest themselves entirely different from those to which we are accustomed, since we base our conclusions upon the existence of matter and force as bringing about the observed results. If we do not consider it possible to explain the whole range of phenomena as the result of matter and force alone, all our explanations of natural phenomena must take a different aspect.

In scientific inquiries we should always be clear in our own minds of the fact that we do not carry the analysis of any given phenomenon to completion; but that we always embody a number of hypotheses and theories in our explanations. In fact, if we were to do so, progress would hardly become possible, because every phenomenon would require an endless amount of time for thorough treatment. We are only too apt, however, to forget entirely the general, and, for most of us, purely traditional, theoretical basis which is the foundation of our reasoning, and to assume that the result of our reasoning is absolute truth. In this we commit the same error that is committed, and has been committed, by all the less civilized people. They are more easily satisfied than we are at the present time, but they also assume as true the traditional element which enters into their explanations, and therefore accept as absolute truth the conclusions based on

it. It is evident that, the fewer the number of traditional elements that enter into our reasoning and the clearer we endeavor to be in regard to the hypothetical part of our reasoning, the more logical will be our conclusions. There is an undoubted tendency in the advance of civilization to eliminate traditional elements, and to gain a clearer and clearer insight into the hypothetical basis of our reasoning. It is therefore not surprising, that, with the advance of civilization, reasoning becomes more and more logical, not because each individual carries out his thought in a more logical manner, but because the traditional material which is handed down to each individual has been thought out and worked out more thoroughly and more carefully. While in primitive civilization the traditional material is doubted and examined by only a very few individuals, the number of thinkers who try to free themselves from the fetters of tradition increases as civilization advances.

The influence of traditional material upon the life of man is not restricted to his thoughts, but manifests itself no less in his activities. The comparison between civilized man and primitive man in this respect is even more instructive than in the preceding case. A comparison between the modes of life of different nations, and particularly of civilized man and of primitive man, makes it clear that an enormous number of our actions are determined entirely by traditional associations. When we consider, for instance, the whole range of our daily life, we notice how strictly we are dependent upon tradition that can not be accounted for by any logical reasoning. We eat our three meals every day, and feel unhappy if we have to forego one of them. There is no physiological reason which demands three meals a day, and we find that many people are satisfied with two meals, while others enjoy four or even more. The range of animals and plants which we utilize for food is limited, and we have a decided aversion against eating dogs, or horses, or cats. There is certainly no objective reason for such aversion, since a great many people consider dogs and horses as dainties. When we consider fashions, the same becomes still more apparent. To appear in the fashions of our forefathers of two centuries ago would be entirely out of the question, and would expose one to ridicule. The same is true of table manners. To smack one's lips is considered decidedly bad style, and may even excite feelings of disgust; while among the Indians, for instance, it would be considered as in exceedingly bad taste not to smack one's lips when one is invited to dinner, because it would suggest that the guest does not enjoy his dinner. The whole range of actions that are considered as proper and improper can not be explained by any logical reason, but are almost all entirely due to custom; that is to say, they are purely traditional. This is even true of customs which excite strong emotions, as, for instance, those produced by infractions of modesty.

While in the logical processes of the mind we find a decided tendency, with the development of civilization, to eliminate traditional elements, no such marked decrease in the force of traditional elements can be found in our activities. These are almost as much controlled by custom among ourselves as they are among primitive man. It is easily seen why this should be the case. The mental processes which enter into the development of judgments are based largely upon associations with previous judgments. I pointed out before, that this process of association is the same among primitive man as among civilized man, and that the difference consists largely in the modification of the traditional material with which our new perceptions amalgamate. In the case of activities, the

conditions are somewhat different. Here tradition manifests itself in an action performed by the individual. The more frequently this action is repeated, the more firmly it will become established, and the less will be the conscious equivalent accompanying the action; so that customary actions which are of very frequent repetition become entirely unconscious. Hand in hand with this decrease of consciousness goes an increase in the emotional value of the omission of such activities, and still more of the performance of actions contrary to custom. A greater will power is required to inhibit an action which has become well established; and combined with this effort of the will power are feelings of intense displeasure.

This leads us to the third problem, which is closely associated with the difference between the manifestation of the power of civilized man and of primitive man to inhibit impulses. It is the question of choice as dependent upon value. It is evident from the preceding remarks that, on the whole, we value most highly what conforms to our previous actions. This does not imply that it must be identical with our previous actions, but it must be on the line of development of our previous actions. This is particularly true of ethical concepts. No action can find the approval of a people which is fundamentally opposed to its customs and traditions. Among ourselves it is considered proper and a matter of course to treat the old with respect, for children to look after the welfare of their aged parents; and not to do so would be considered base ingratitude. Among the Eskimo we find an entirely different standard. It is required of children to kill their parents when they have become so old as to be helpless and no longer of any use to the family or to the community. It would be considered a breach of filial duty not to kill the aged parent. Revolting though this custom may seem to us, it is founded on an ethical law of the Eskimo, which rests on the whole mass of traditional lore and custom.

One of the best examples of this kind is found in the relation between individuals belonging to different tribes. There are a number of primitive hordes to whom every stranger not a member of the horde is an enemy, and where it is right to damage the enemy to the best of one's power and ability, and if possible to kill him. This custom is founded largely on the idea of the solidarity of the horde, and of the feeling that it is the duty of every member of the horde to destroy all possible enemies. Therefore every person not a member of the horde must be considered as belonging to a class entirely distinct from the members of the horde, and is treated accordingly. We can trace the gradual broadening of the feeling of fellowship during the advance of civilization. The feeling of fellowship in the horde expands to the feeling of unity of the tribe, to a recognition of bonds established by a neighborhood of habitat, and further on to the feeling of fellowship among members of nations. This seems to be the limit of the ethical concept of fellowship of man which we have reached at the present time. When we analyze the strong feeling of nationality which is so potent at the present time, we recognize that it consists largely in the idea of the preeminence of that community whose member we happen to be,—in the preeminent value of its language, of its customs and of its traditions, and in the belief that it is right to preserve its peculiarities and to impose them upon the rest of the world. The feeling of nationality as here expressed, and the feeling of solidarity of the horde, are of the same order, although modified by the gradual expansion of the idea of fellowship; but the ethical point of view which makes it justifiable at the present time to increase

the well-being of one nation at the cost of another, the tendency to value one's own civilization as higher than that of the whole race of mankind, are the same as those which prompt the actions of primitive man, who considers every stranger as an enemy, and who is not satisfied until the enemy is killed. It is somewhat difficult for us to recognize that the value which we attribute to our own civilization is due to the fact that we participate in this civilization, and that it has been controlling all our actions since the time of our birth; but it is certainly conceivable that there may be other civilizations, based perhaps on different traditions and on a different equilibrium of emotion and reason which are of no less value than ours, although it may be impossible for us to appreciate their values without having grown up under their influence. The general theory of valuation of human activities, as taught by anthropological research, teaches us a higher tolerance than the one which we now profess.

Our considerations make it probable that the wide differences between the manifestations of the human mind in various stages of culture may be due almost entirely to the form of individual experience, which is determined by the geographical and social environment of the individual. It would seem that, in different races, the organization of the mind is on the whole alike, and that the varieties of mind found in different races do not exceed, perhaps not even reach, the amount of normal individual variation in each race. It has been indicated that, notwithstanding this similarity in the form of individual mental processes, the expression of mental activity of a community tends to show a characteristic historical development. From a comparative study of these changes among the races of man is derived our theory of the general development of human culture. But the development of *culture* must not be confounded with the development of *mind*. Culture is an expression of the achievements of the mind, and shows the cumulative effects of the activities of many minds. But it is not an expression of the organization of the minds constituting the community, which may in no way differ from the minds of a community occupying a much more advanced stage of culture.

FRANZ BOAS.

ASSOCIATION OF AMERICAN ANATOMISTS.

THE fourteenth session of the Association of American Anatomists, meeting with the American Society of Naturalists and Affiliated Societies in Baltimore, Md., was held in the Anatomical Laboratory of the Johns Hopkins University, December 27 and 28, 1900.

The meeting was called to order, December 27th at 10:20 A.M., by President George S. Huntington.

The Executive Committee reported and recommended the names of eleven candidates for membership. Also a recommendation that at the discretion of the secretary the first five 'Proceedings,' now out of print, should be reprinted. Also a recommendation that the Association endorse the proposition for the establishment of a psycho-physical laboratory in the Bureau of Education, Washington, D. C.

By unanimous consent the secretary cast the ballot for the nominees for membership. The Association also authorized the secretary to reprint the five 'Proceedings' as recommended. The recommendation to endorse the psycho-physical laboratory was not agreed to and was referred to a committee to be appointed by the president to report at a future meeting. It was discussed unfavorably by Drs. Holmes and Hrdlicka.

The Secretary made his yearly report, which stated, among other things, that he had in hand copies of the 'Proceedings'